

# **The Political Economy of the Taxation of Individuals in North Cyprus**

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### **Abstract**

The objective of this study is to undertake a diagnostic of the system of personal direct taxation and charges levied to fund social security and the provident fund in Northern Cyprus, using a database of all individual taxpayers. Particular attention was given to the assessment of marginal tax rates on labor income and their possible effect on fiscal compliance. It was found that the tax system itself, and its interaction with the social security and provident fund systems, has created a powerful set of incentives for non-compliance. Top-income earning private-sector employees face a very high combined marginal fiscal burden. This has resulted in massive tax avoidance, such that most private employees pay no marginal income tax or social security/provident fund contributions on income above the minimum wage. In addition, the private self-employed allocate their wage incomes so as to minimize the total burden of social security payments and provident fund contributions, and individual and corporate income tax dues. Very high marginal tax rates at low (by developed-country standards) levels of income have created informal administrative measures to alleviate the fiscal burden on individuals. The end result however, is neither equitable nor economically neutral.

**Key words:** Pensions funds, personal income tax, tax incidence, tax compliance, fiscal equity

**JEL Classification:** H24, H26

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## **1. Introduction**

The objective of this study is to undertake a diagnostic of the direct taxation of individuals in the Turkish Republic of Northern Cyprus (TRNC or Northern Cyprus). Very little analysis has been done to date on the implications of the direct tax policies of Northern Cyprus (Jenkins, 2001)—a system that includes the individual income tax system and charges levied for the funding of social security and the TRNC provident fund. Particular attention will be given here to the assessment of marginal tax rates on labor income and their possible effect on tax compliance and fiscal burden. The fairness of the tax system will also be studied in terms of its horizontal equity.

The TRNC tax system is conventional overall, covering personal income tax, corporation income tax, value-added tax, and a number of excise taxes (funds). In 2016, total direct and indirect tax collected amounted to 22.36% of GDP (State Planning Organization, 2016)—a relatively high rate for a middle-income country, comparable to Portugal (22.5%) and the Republic of Cyprus (South Cyprus—24.33%) in the same year (International Monetary Fund, Government Financial Statistics Yearbook, 2018).<sup>1</sup>

However, this apparently solid performance obscures several critical structural and fiscal imbalances in the public finances of the TRNC that will inevitably necessitate a major restructuring of its fiscal system. One major cause of the fiscal imbalance is the inadequate funding of the public pension system. A total of 12.11% of GDP was transferred to the retired through social security payments and civil servants' pensions in 2015, contributing to an estimated operating deficit of

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<sup>1</sup>The income per capita for South Cyprus is approximately 70% greater than that of the TRNC.

8.87% of GDP (including unfunded gratuity payments to civil servants hired prior to 2009) and accounting for 40% of total tax revenues.<sup>2</sup> Without major reform, this deficit will continue to grow at around the same rate until at least 2040 (Altiok and Jenkins, 2018).

A second impetus for tax reform is to align the TRNC with European Union (EU) norms (Hofmann, Hoelzl, & Kirchler, 2008; Radaelli, 2013; Christians, 2007). Prior to the implementation of its EU-accession program, the Republic of Cyprus (South Cyprus) operated a system of direct taxation not dissimilar to that currently in place in the TRNC (a consequence of common legislation in force island-wide until 1974). The process of aligning the South Cyprus tax system with that of the EU took some 10 to 15 years (Jenkins and Poufos, 2002): If the political objective of joining the EU is to be realized in the not-too-distant future, the TRNC therefore needs now to begin the process of realigning its tax system.

A third and final factor in restructuring the TRNC tax system is ever-tightening budget constraints. Since 1974 the government of Turkey has extended significant fiscal support to the TRNC, covering public sector deficits through grants or forgivable loans. ‘Soft’ budgets have been built on an expectation that operating-budget funds and capital expenditure on public-sector infrastructure projects will be augmented. Resultant chronic budgetary deficits have produced a situation in which systematic development planning using locally available resources has become impossible. At the same time, Turkey’s ongoing fiscal crisis casts doubt on its continued financing of TRNC public-sector deficits. The reality of the budgetary constraints facing the TRNC therefore lends still greater impetus to the need to re-examine potential sources of revenue.

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<sup>2</sup> Each civil servant hired prior to 2009 receives a lump sum gratuity equal to the monthly salary during the last year of service times years of service.

## 2. Data and Methodology

The database used in the following analysis includes the annual gross income and demographic characteristics of all individuals in the TRNC contributing to both the social security (SS) and civil service pension funds, at any time during 2015. The total number of contributors in that year was 122,580 (Table 1, row 5)—91,517 employees, 11,586 self-employed persons, 10,706 civil servants hired before 2009 and 8,771 civil servants hired after 2008. This total is broadly consistent with a government estimate of 121,854 contributors for 2015 (Table 1, row 6; SPO, 2015).

Table 1. Number of Contributors/Taxpayers by Type, 2015<sup>3</sup>

Type	1	2
	Number	%
1. Employees	91,517	74.70%
2. Self-Employed	11,586	9.50%
3. Civil Servants hired after 2008	8,771	7.10%
4. Civil Servants hired prior to 2009	10,706	8.70%
5. Total (from SS records)	122,580	100.00%
6. Labor Force (SPO)	121,854	99.40%

Gross reported income is available for each individual and, with the exception of civil servants, there is no doubt that there is a degree of underreporting of income by all groups (Besim and Jenkins, 2005; Besim, Ekici, & Jenkins, 2015; Besim, 2001). However, in order to develop a better understanding of the distribution of incomes in the TRNC, individuals have been ranked according

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<sup>3</sup> Employees are non-governmental labor force members, including employees in the private sector, state university employees and employees of parastatal organizations. Civil servants include all those employed and paid directly by the government.

to annual reported gross income and divided into five quintiles of 24,516 individuals each (Table 2).

Table 2. Reported Individual Gross Incomes by Quintile, 2015

	1	2	3	4
Quintile	No of People	Percentage of Gross Income	Average Annual Gross Income (TL)	Average Annual Gross Income (USD)
1	24516	4.14%	6,221	2,228
2	24516	11.29%	16,949	6,071
3	24516	13.72%	20,598	7,378
4	24516	22.28%	33,445	11,979
5	24516	48.57%	72,920	26,118
Total	122580	100.00%	30,027	10,755

The average annual income of individuals in the first (bottom) quintile is very low—just 6,221 TL (US\$ 2,228) or 8.53% of top quintile average incomes (Table 2).<sup>4</sup> This is partly accounted for by migrant workers, active in the TRNC labor market for short periods of time, as well as new entrants into the labor force who are yet to contribute social security for a full year. Average reported income for this group is thus (significantly) below the annual minimum wage of 16,884 TL for 2015.

The top four quintiles are likely to be more representative of labor force incomes in North Cyprus. The average income of those in the second quintile is 16,949 TL, slightly above the minimum wage for 2015. Because incomes below the minimum wage are exempt of tax, there is an incentive for individuals to report an annual income close to or only slightly above the minimum wage—a point at which workers comply with the law by registering for and paying social security and

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<sup>4</sup> The average exchange rate in 2015 was 2.79 TL per dollar.

provident fund contributions but avoid paying income tax, even if their incomes are in reality considerably higher.

The third quintile has a slightly higher average declared income of 20,598 TL—albeit still low enough that little if any income tax is payable. The tax exemption on income equal to the minimum wage plus standard personal and family deductions are sufficient to ensure that most of this group is also exempt of income tax.

Income tax is payable on incomes of 72,920 TL—the fourth quintile. The difference in average reported incomes between the fourth and fifth quintiles is 118.03%, compared to 62.37% between the third and fourth, and 21.52% between the second and third.

Table 3 provides greater insight into the profile of reported incomes, breaking quintiles into constituent categories (employee, self-employed, civil servant). A total of 76.40% of employees are in the bottom three quintiles of reported incomes. Of the 23.60% of employees in the top two quintiles, 15.30% are in the fourth and 8.20% in the fifth. In contrast, 25.40% of self-employed are in the bottom three quintiles of reported incomes. However, 64.60% of self-employed report incomes in the fourth quintile and 10.00% in the fifth quintile, making a total of 74.60% in the top two quintiles.

Table 3. Distribution of Contributors/Taxpayers by Type and by Quintile of Reported Gross Income, 2015

Quintile by GI	1	2	3	4	5
	Employees	Self-Employed	Post-2008 Civil Servants	Pre-2009 Civil Servants	Total Civil Servants
1	25.20%	9.10%	4.40%	0.00%	2.00%
2	25.60%	7.30%	2.40%	0.00%	1.10%
3	25.60%	9.00%	0.50%	0.00%	0.20%
4	15.30%	64.60%	34.00%	0.10%	15.40%
5	8.20%	10.00%	58.70%	99.90%	81.40%
Sum	100.00%	100.00%	100.00%	100.00%	100.00%
Total # of people	91,517	11,586	8,771	10,706	19,477
% of Total	74.70%	9.50%	7.10%	8.70%	15.80%

The category of employee exhibiting the most skewed distribution of income is that of civil servants (Table 3, column 5). Just 3.30% of civil servants report incomes in the bottom three quintiles and 15.40% in the fourth quintile, with 81.40% in the top (fifth) quintile.

Civil servants hired post-2008 are subject to lower starting salaries than those hired pre-2009 (Kamu Çalışanlarının Aylık (Maaş-Ücret) ve Diğer Ödeneklerinin Düzenlenmesi Yasası, 2010). Thus, the category of civil servant is most usefully divided into two groups: pre-2009 civil servants (Table 3, column 4) and post-2008 civil servants (Table 3, column 3).

Some civil servants who have yet to complete a full year on the payroll are in the first three income quintiles. Of the post-2008 civil servants, 34.00% earn salaries in the fourth quintile and 58.70% in the fifth quintile. Of pre-2009 civil servants, almost all are in the fifth quintile (Table 3, column 4).

### **3. Estimation of Social Security and Provident Fund Contributions**

The TRNC's social security system is administered separately from the personal income tax system. However, individual social security and provident fund contributions are deductible in calculating personal income tax (Table 4).

Employees make social security contributions of 5.00% towards pensions and 4.00% towards health and other services, including unemployment insurance, calculated as a percentage of declared gross annual income. In addition, employees are required to contribute a minimum of 4.00% a year to the government-run provident fund—in essence, a forced-savings program. Employers are also required to make contributions on behalf of their employees: 7.50% of declared employee income toward pensions, 3.50% toward health and other services, and a minimum of 4.00% to employees' provident fund accounts,<sup>5</sup> making for total combined employer and employee social security contributions of 20.00% of employee declared income. Combined provident fund contributions amount, with a few exceptions, to 8.00% of employee declared income (Altiok and Jenkins, 2015).

Combined employer and employee social security and provident fund contributions therefore amount to 28.00% of employee declared income (Table 4, columns 1, 2 and 3). In terms of tax incidence, however, it is immaterial whether contributions are made by the employee or the employer as all such charges impact on the cost of labor.

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<sup>5</sup> Eastern Mediterranean University is one of the exceptional cases where both the employee and the employer contribute 5% toward the employee provident fund account.



Table 4. Rates of Social Security and Provident Fund Contributions Expressed as a Percentage of Declared Gross Income, 2015

		1	2	3	4	5	
		Employee and post 2008 CS	Employer	Employee+ Employer	Self-employed	Pre 2009 CS	
1	Social Security	a. Pension	5.00%	7.50%	12.50%	12.50%	9%(M), 5%(F)
		b. Other (Health etc.)	4.00%	3.50%	7.50%	6.00%	0.00%
2	Provident Fund (PF)		4.00%	4.00%	8.00%	0.00%	0.00%
3	Total SS and PF		13.00%	15.00%	28.00%	18.50%	9%(M), 5%(F)

Individuals who have a provident fund account are in effect making a loan to the government. Interest is paid by on an account holder’s balance, which can be withdrawn as a lump sum payment on retirement. While social security pension payouts are indexed for inflation, the real value of a provident fund account falls when the interest rate paid is less than the rate of inflation.<sup>6</sup> No income tax is payable on provident fund interest or accumulated principal, nor on pensions or one-off gratuity payable to civil servants on retirement.

For the self-employed, the pension component of social security contributions amounts to 12.50% of gross declared income, with a further 6.00% payable toward health and other components of the social security system (Table 4, column 4). The self-employed are permitted but not required to contribute to the provident fund. Despite the fact that such contributions are tax deductible and interest and lump sum withdrawals not subject to income tax, not a single self-employed individual contributed to the TRNC fund in the year of our analysis, 2015.

Government employees hired after 2008 are automatically enrolled in the social security system, with employee and employer contributing to social security and the provident fund at the same

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<sup>6</sup> For example in December 2018, the interest rate paid on provident fund deposits was 19% where the SPO’s projected annual inflation rate for 2018 was 40.5%.

rates as private-sector equivalents. Civil servants employed prior to 2009 do not contribute to the social security system. However, since 1987 male civil servants have been required to contribute 9.00% of gross annual salary towards retirement benefits, and female civil servants 5.00% (Table 4, column 5). Civil servant pension benefits consist of a monthly pension payment after retirement, plus one-off gratuity payment on retirement, calculated according to monthly salary and years of service (Altiok and Jenkins, 2013a).

An accurate quantitative analysis of the revenue impacts of changes to TRNC individual tax rates and/or the tax base can be generated through a micro-simulation model of three revenue sources: social security, the provident fund and income tax. First, the estimated tax base from which contributions to each of these three systems are levied is calculated, based on individual reported incomes for 2015. The labor force is then divided into category of employment: employee (including civil servants employed after 2008), self-employed or civil servant employed before 2009, and relevant rates of social security and provident fund applied (excluding contributions for civil servants employed prior to 2009, as these are collected by a separate arm of the government). Because calculation of the overall deficit of the TRNC pension system includes civil service gratuity payments, retirement-benefit payments by civil servants hired before 2009 are included as government revenues and reported separately (Table 10).

Table 5. Total Estimated Contributions to Social Security and Provident Fund by Employees, Including Employer Contributions,<sup>7</sup> and by the Self-employed (Million TL, by Quintile, 2015)

	1		2	3	4	5	6	7
Quintile	Type of Contributor		Total Contributions to Social Security Million TL	% of Total	Contributions to Provident Fund Million TL	% of Total	SS+P F	% of Total
1	A	Employee+Employer	28.9	5.30%	11.6	6.00%	40.5	5.40%
	B	Self-Employed	1.5	0.30%	0	0.00%	1.5	0.20%
	C	Total	<b>30.4</b>	<b>5.50%</b>	<b>11.6</b>	<b>6.00%</b>	<b>41.9</b>	<b>5.60%</b>
2	A	Employee+Employer	80.3	14.60%	32.1	16.80%	112.5	15.10%
	B	Self-Employed	2.6	0.50%	0	0.00%	2.6	0.30%
	C	Total	<b>82.9</b>	<b>15.00%</b>	<b>32.1</b>	<b>16.80%</b>	<b>115</b>	<b>15.50%</b>
3	A	Employee+Employer	96.7	17.50%	38.7	20.20%	135.4	18.30%
	B	Self-Employed	4	0.70%	0	0.00%	4	0.50%
	C	Total	<b>100.7</b>	<b>18.30%</b>	<b>38.7</b>	<b>20.20%</b>	<b>139.4</b>	<b>18.80%</b>
4	A	Employee+Employer	107.4	19.50%	43	22.40%	150.4	20.20%
	B	Self-Employed	52.3	9.50%	0	0.00%	52.3	7.00%
	C	Total	<b>159.7</b>	<b>28.90%</b>	<b>43</b>	<b>22.40%</b>	<b>202.6</b>	<b>27.30%</b>
5	A	Employee+Employer	165.1	30.00%	66.1	34.60%	231.2	31.10%
	B	Self-Employed	12.9	2.30%	0	0.00%	12.9	1.70%
	C	Total	<b>178</b>	<b>32.30%</b>	<b>66.1</b>	<b>34.50%</b>	<b>244</b>	<b>32.80%</b>
I	Total contribution of Employee+Employer		<b>478.4</b>	<b>86.90%</b>	<b>191.4</b>	<b>100.00%</b>	<b>670</b>	<b>90.10%</b>
II	Total contribution of		<b>73.3</b>	<b>13.30%</b>	<b>0</b>	<b>0.00%</b>	<b>73.3</b>	<b>9.70%</b>
	Self-Employed							
III	Estimated Total TL		<b>551.6</b>	<b>100.00%</b>	<b>191.4</b>	<b>100.00%</b>	<b>743</b>	<b>100%</b>
IV	Actual Collections TL		526.1		180.5		706.6	
V	Difference		4.90%		6.00%		5.20%	

The results of a micro-simulation for each of the 122,580 individuals in our database are then sorted by employment type and quintile of pre-tax income. Table 5 presents micro-simulation model results for 2015 social security and provident fund contributions, estimated for each of the five quintiles of income distribution and for the overall system total.

<sup>7</sup> Estimates for employee and employer include those civil servants employed after 2008. These individuals are now treated exactly the same as private sector employees. Contributions to the pensions of civil servants employed before 2009 are not included in Table 5.

In order to establish how closely the model describes the situation in the TRNC, we compare predicted and actual revenues collected in 2015 (Table 5, rows III-V). Based on individual declared incomes, the model predicts collections just 5.25% above actual collections for 2015—743 million TL vs 706.6 million. (Actual revenues are likely to have been lower because some employers fail to submit employee contributions to social security or provident fund authorities.)

Examining the results more closely, we find that employees and employers (including post-2008 civil servants) account for approximately 90% of combined contributions to each fund, while 86.90% of social security contributions are made on behalf of employees and only 13.30% on behalf of the self-employed (Table 5, column 3, rows I and II). Furthermore, over 60% of these social security contributions were made by the 40% of individuals in the two top quintiles of reported incomes.

With respect to the provident fund, 100% of contributions are by employees and their employers, including post-2008 civil servants. No contributions to this fund were made by either the self-employed or pre-2009 civil servants. Approximately 57% of contributions to the provident fund were made by 21.5% of employees (and their employers), who reported incomes in the top two quintiles.

#### **4. Modelling the Personal Income Tax System**

Individual income tax is based on taxable (chargeable) income, as determined by a series of tax rules (Table 6). Taxable income is subject to a progressive structure of marginal statutory rates, ranging from 10.00% to 37.00% (Table 7).

Table 6 (row 1) defines taxable income for employees (private-sector or post-2008 civil servants); row 2 defines taxable income for the self-employed; and row 3 defines taxable income for pre-2009 civil servants.

Taxable income is calculated by deducting from gross salaries the following allowances: employee contributions to social security and provident fund; a personal (“special”) deduction of 17.00% of remaining income; a deduction for municipal tax equal to 0.02% of gross income; the official minimum wage; marriage allowance for eligible male taxpayers; and child allowance for dependent children aged 18 years or less (Table 6, row 1).<sup>8</sup>

Taxable income for the self-employed is calculated in a similar manner, except that the personal deduction is 10.00% of income remaining after deductions for social security and provident fund contributions. As noted above, no self-employed individual chose to make payments to the provident fund in 2015 (Table 6, row 2).

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<sup>8</sup> The amount of declared income does not include interest or rental income. Such income is taxable at a rate of 10% of gross receipts as a final tax. These sources of income are not included in the estimation of taxable income for the estimation of income tax liabilities.

Table 6. Summary of Individual Income Taxation Rules in TRNC, 2015

1	Taxable Income Employees and Post 2008 Civil Servants	= GI-SS <sub>e</sub> - PF- D <sub>1</sub> -D <sub>3</sub> -D <sub>4</sub> -D <sub>5</sub> -D <sub>6</sub>		Definition of Components of Calculation of Taxable Income
2	Taxable Income Self Employed	= GI- SS <sub>se</sub> - PF- D <sub>2</sub> -D <sub>3</sub> -D <sub>4</sub> -D <sub>5</sub> -D <sub>6</sub>		
3	Taxable Income pre2009 Civil Servants	=GI- PC - D <sub>1</sub> -D <sub>3</sub> -D <sub>4</sub> -D <sub>5</sub> -D <sub>6</sub>		
4	Gross Income			GI
5	Total Social Security Contributions Made By Individual Employees and Post 2008 Civil Servants (SS <sub>e</sub> )			GI (0.09)
6	Total Social Security Contributions Made By Individual Self-Employed (SS <sub>se</sub> )			GI (0.185)
7	Total Pension Contributions Made By Individual pre2009 Civil Servants (PC)	Male		GI (0.09)
		Female		GI (0.05)
8	Total Provident Fund Contributions Made By Individual Employees and Post 2008 Civil Servants (PF)			GI (0.04)
9	Special Deduction For Employee and Post and Pre2009 Civil Servants (D <sub>1</sub> )			(GI-SS-PF)(0.17)
10	Special Deduction For Self- Employed (D <sub>2</sub> )			(GI-SS-PF)(0.10)
11	Municipal Tax (D <sub>3</sub> )			(GI)(0.002)
12	Min Wage (D <sub>4</sub> )			16884
13	Marriage Deduction (D <sub>5</sub> )	Male	Married	1464
			Single	732
		Female		1464
14	Child Deduction (D <sub>6</sub> )	Father		1013
		Mother		0

A similar set of deductions defines taxable income for pre-2009 civil servants, except that this group does not contribute to social security or the provident fund, and enjoys a tax deduction for contributions toward their civil service pensions (Table 6, row 3). Similar to private-sector employees, this group is entitled to a personal deduction equal to 17.00% of income, after deducting annual pension fund contributions. Deductions equivalent to the minimum wage, a marriage allowance,<sup>9</sup> and deduction for children are also allowed in the calculation of taxable income.<sup>10</sup>

<sup>9</sup> It is assumed that all men older than 23 are eligible for the marital tax deduction.

<sup>10</sup> The number of children for each individual taxpayer is unknown. However, the number of children aged 18 and under is known from the census (SPO 2006, Population Census, TRNC Citizens De-Jure Population by Citizenship,

The taxpayer revenue micro-simulation model built to analyze the TRNC income tax system introduced parameters by taxpayer type, in order to calculate taxable (chargeable) income. Marginal statutory tax rates were then applied to taxable income by tax bracket (Table 7).

Table 7. Income Tax Brackets and Tax Rates for Individual Income Taxation in the TRNC, 2015

Taxable income (TL) in the tax year (2015)	Tax Rate (%)
First 3,000 TL	10%
From 3,000 to 6,000 TL	20%
From 6,000 to 13,600 TL	25%
From 13,600 to 23,650 TL	30%
over 23,650 TL	37%

## **5. Income Tax Revenues, Incidence and Effective Rates of Taxation**

Despite a minimal number of assumptions, the micro-simulation model of income tax proved highly accurate. According to government figures, actual income tax collected in 2015 was 278.28 million TL, compared to the model's estimated total income tax revenue of 277.72 million TL (Table 8, rows I-II).

A surprising finding is that no income tax was paid by any individual in the bottom three quintiles of income distribution. Total income tax payments for the 24,516 individuals in the fourth quintile accounted for 8.90% of total income tax payments in 2015, leaving 91.10% of total income tax collections paid by the fifth quintile of earners (Table 8, column 4).

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Age Group and Gender). The number of children of 18 years of age and under is approximately the same as the number of males between the ages of 23 and 50 years of age. Hence, it was assumed that each male taxpayer between the ages of 23 and 50 had one dependent child. As we are most interested in aggregate revenue numbers, it appears that this assumption is a very good description of the actual situation.

Considering the individuals by type of employment, civil servants (pre-2009- and post-2008) accounted for 64.80% of total income tax revenue. A further 23.50% of tax revenues was collected from 7,508 high income employees (top quintile). A significant proportion of these are the faculty members of the two state universities, or employees of parastatal organizations or one of the few large private banks. The self-employed in this quintile contributed only 2.80% of total income tax revenue.

The average effective rate of income tax paid by individuals in the fourth quintile of reported income ranges from 2.10% for employees to 4.40% for the self-employed, 3.20% for post-2008 civil service employees and 4.40% for pre-2009 civil service employees.

The lowest average effective rates of income tax are paid by fourth-quintile employees, who have the least declared income in the quintile (30,803 TL—Table 9, column 1, row 4). This group also has the highest allowed rate of tax deductions. Employees are eligible for deductions for social security and provident fund contributions (13.00%—Table 4, column 1), followed by a general deduction equal to 17.00% of declared income. Post-2008 civil servants in the fourth quintile are likely to be new hires, and qualify for the same tax deductions as private employees (Table 8, row 4b). However, their average reported income (35,033 TL) is greater than that of employees, hence subject to a higher average rate of income tax (Table 9, column 3, row 4).

The self-employed have the highest average declared income in the fourth quintile (37,771 TL—Table 9, column 2, row 4), and are entitled to a higher deduction for social security payments than employees (for higher contributions) but a lower general deduction (10.00% vs 17.00%), resulting



in a lower overall rate of deductions of 28.5% vs 30% for employees. The combined effect is that the self-employed are subject to the highest average tax rate, of 4.40%.

Fourth quintile pre-2009 civil servants are also subject to an average tax rate of 4.40%, even though their average income (34,268 TL) is lower than that of the self-employed in the same quintile (Table 9, column 4, row 4). This is because they make no social security contributions and therefore have combined tax deductions significantly lower than any other group.

In the fifth quintile, the distribution of average income tax paid on gross reported income is 12.60% for employees, 10.30% for post-2008 civil servants, 11.10% for the self-employed, and 16.60% for pre-2009 civil servants (Table 8, column 5, rows 5a-5d).

Table 8. Estimated Personal Income Tax Liability, 2015

Quintile		1	2	3	4	5
		Type of Taxpayer	No of People	Tax	%	Tax Paid/GI
1	A	Employee	23,079	0	0.00%	0.00%
	B	Post-2008 CS	385	0	0.00%	0.00%
	C	Self-Employed	1,052	0	0.00%	0.00%
	D	Pre-2009 CS	-	0	0.00%	0.00%
	E	Total	24,516	0	0.00%	0.00%
2	A	Employee	23,465	0	0.00%	0.00%
	B	Post-2008 CS	207	0	0.00%	0.00%
	C	Self-Employed	844	0	0.00%	0.00%
	D	Pre-2009 CS	-	0	0.00%	0.00%
	E	Total	24,516	0	0.00%	0.00%
3	A	Employee	23,424	0	0.00%	0.00%
	B	Post-2008 CS	43	0	0.00%	0.00%
	C	Self-Employed	1,048	0	0.00%	0.00%
	D	Pre-2009 CS	1	0	0.00%	0.00%
	E	Total	24,516	0	0.00%	0.00%
4	A	Employee	14,041	9,033,615	3.30%	2.10%
	B	Post-2008 CS	2,985	3,312,177	1.20%	3.20%
	C	Self-Employed	7,479	12,389,235	4.50%	4.40%
	D	Pre-2009 CS	11	16,675	0.00%	4.40%
	E	Total	24,516	24,751,702	8.90%	3.00%
5	A	Employee	7,508	65,324,543	23.50%	12.60%
	B	Post-2008 CS	5,151	31,580,751	11.40%	10.30%
	C	Self-Employed	1,163	7,695,476	2.80%	11.10%
	D	Pre-2009 CS	10,694	148,365,526	53.40%	16.60%
	E	Total	24,516	252,966,296	91.10%	14.20%
I	Estimated Total 2015		122,580	277,717,997	100.00%	
II	Actual Individual Income Tax Collections 2015			278,278,993		

The average declared fifth quintile gross income for pre-2009 civil servants is 83,459TL, compared to 69,199TL for private employees, 59,768TL for the self-employed and 59,431TL for post-2009 civil servants (Table 9, row 5). As outlined above, pre-2009 civil servant income tax deductions are lower than for any other taxpayer group.

Table 9. Average Gross Income by Quintile of Contributors/Taxpayer Type, 2015

Quintile by GI	Employees 1	Self-Employed 2	Post-2008 Civil Servants 3	Pre-2009 Civil Servants 4	Total Civil Servants 5
1	6,138	7,563	7,510	0	7,510
2	16,982	16,478	15,166	0	15,166
3	20,604	20,441	21,439	21,117	21,431
4	30,803	37,771	35,033	34,268	35,030
5	69,199	59,768	59,431	83,459	75,648
Total # of People	91,517	11,586	8,771	10,706	19,477

The TRNC income tax regime appears at first glance to offer a progressive structure, whereby significantly higher average tax rates apply to fifth than fourth quintile earners. However, an analysis of ultimate incidence reveals a more complex picture. Leaving aside the 1,163 self-employed, income tax revenue from the fifth quintile is levied on the salaries of public-sector/parastatal organization employees, who are paid comparatively high salaries in compensation (Table 8, column 2, row 5).

The income-tax system is therefore to a large extent simply a means of reclaiming a proportion of the higher salaries paid to civil servants, university faculty and administrators, and the employees of parastatal organizations, while in the case of pre-2009 civil servants, it serves also to compensate the government for their non-contribution to social security. In the case of post-2008 civil servants and employees of state universities and parastatal organizations, income tax serves to reduce the

net-of-tax cost of wages. At the same time, the system imposes little or no burden on the vast majority of private-sector employees.

## **6. Measuring the Total and Relative Burden of the Direct Taxation System**

Table 10 presents income tax burden, social security contributions and provident fund payments by labor type. Only those in the top two quintiles report sufficient income to be subject to income tax. Almost 75% of the registered labor force are employees, accounting for 64.00% of total social security payments and 82.50% of provident fund contributions but only 26.80% of total income tax collected (Table 10, row 1). Overall, employees contribute 57.80% of total government revenues obtained from these three sources (social security, provident fund and income tax)—their individual tax burden is about 77% of the average per capita tax burden on all such income-declaring individuals.

The self-employed comprise 9.50% of taxpayers and account for 7.30% of total income tax collected, 11.80% of social security and no provident fund contributions, or 8.50% of total government revenues from these three sources—their average individual tax burden is about 89% of the average per capita tax burden of all income-declaring individuals (Table 10, row 2).

By contrast, post-2008 civil servants account for 7.20% of taxpayers but 12.60% of income tax revenues, 13.50% of social security and 17.50% of provident fund contributions, amounting to 14.00% of total government revenue from these three sources—their individual tax burden is about 111% of the average per capita tax burden of all income-declaring individuals (Table 10, row 3). Still more striking, pre-2009 civil servants comprise 8.70% of the total declared labor force but

contribute 53.40% of income tax revenues, 10.70% of social security contributions (and zero provident fund contributions), amounting to 19.70% of total government revenues from these three sources (Table 10, row 4)—their average individual tax burden is approximately 226% of the average per capita tax burden of all income-declaring individuals.

Table 10. Total Direct Tax Incidence (Including Provident Fund Contributions) by Labor Type, 2015

	Category	1		2		3		4		5	
		No of Individuals		Income Tax Revenue (Million)		SS Contributions (Million)		PF Contributions (Million)		Tax+SS+PF Rev (Million)	
1	Employee+ Employer	91,517	74.70%	74.4	26.80%	395	64.00%	158	82.50%	627.3	57.80%
2	Self-Employed	11,586	9.50%	20.1	7.30%	73.1	11.80%	0	0.00%	93.2	8.50%
3	Post 2008 Civil Servants	8,771	7.20%	34.9	12.60%	83.5	13.50%	33.4	17.50%	151.8	14.00%
4	Pre 2009 Civil Servants	10,706	8.70%	148.4	53.40%	66	10.70%	0	0.00%	214.3	19.70%
5	All Civil Servants	19,477	15.90%	183.3	66.00%	149.5	24.20%	33.4	17.50%	366.2	33.70%
6	Total	122,580	100.00%	277.7	100.00%	617.6	100.00%	191.4	100.00%	1,086.70	100.00%

Total government revenues from the three sources considered (social security, provident fund and income tax) accounted for approximately 10.6% of TRNC GDP of 10,222,456,040.20 TL (current prices) in 2015 (SPO, 2015). Total social security contributions (pensions, health and other benefits, plus pension contributions by pre-2009 civil servants) amounted to 617.6 million TL, of which 67.10% or 414.5 million TL were pension payments—accounting for 4.05% of GDP (Table 10, column 3). Total annual expenditure on social security and civil service pensions in 2016 amounted to 12.11% of GDP (Ahtiok and Jenkins, 2018).

The central fiscal question facing the government is therefore how to close an annual pension funding gap of approximately 8.06% of GDP.

One potential source of revenue is the personal income tax. In 2015, income tax receipts totaled 278 million TL or approximately 2.7% of GDP, with civil servants accounting for 66.00% of total income tax revenues (Table 10, column 2, row 5). The income tax on civil servants largely represents a circulation of public sector funds, whereby higher-than-competitive salaries are taxed at higher rates than those of private sector employees.

Consider a situation in which all of income tax paid by civil servants were eliminated without any loss to the Treasury, by reducing public sector salaries by an amount equal to the reduction in income tax revenue. The result would lead maximum collections of individual income tax of just 94.4 million TL—i.e. the personal income tax system is collecting only around one percentage point of GDP from non-government entities.<sup>11</sup> These people are the ones who are benefiting from the very substantial social security pension fund subsidies.

### **7. Incentives Created by the Direct Tax System in the TRNC**

Taxpayers in Northern Cyprus with the option of considering tax avoidance strategies face complex tradeoffs. While there are strong sanctions against employees or the self-employed not registering with the social security office, private sector employees have the option of declaring an income as low as the minimum wage even if one's true income is much higher. This practice is facilitated by the fact that private employees can declare a level of compensation for the basis of the calculation of social security and provident fund contributions and of individual income tax, while employers are allowed to deduct the full amount of employees' total compensation as a business expense for the purposes of corporation taxation. Although technically illegal, this

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<sup>11</sup> This non-governmental tax revenue also includes income tax revenue paid by the employees of parastatal organizations.

arrangement has been sanctioned in practice by the government and tax administration, in an effort to maintain private sector competitiveness.

It is important to note that tax compliance is determined almost entirely through the system of tax withholding by employers. Once it has been decided how much the employee will declare as gross monthly income, the employer is responsible for the withholding and payment of taxes and contributions. That is to say, any understatement of employee income is a joint decision by employer and employee.

However, following reform of the social security pension system in 2008, the formula for calculating individual benefits is based on individual contributions relative to average contributions over the period of individual contributions (Altiok and Jenkins, 2015). Declaring a lower income therefore limits the size of pension an individual employee will be entitled to.

Inflation-indexed social security pensions in the TRNC are currently very heavily subsidized. The current rate of social security contribution is 12.50% of gross declared income, compared to the 34.60-42.30% at which the pension component of the current reformed social security system would break even over a person's lifetime (Altiok and Jenkins, 2015). Furthermore, pension payments received from the social security system are not taxable. There should therefore be a powerful incentive to declare a higher income in order to receive a higher subsidized pension.

However, somewhat offsetting this incentive is the fact that other benefits accessed via the social security system (such as health care or disability payments) are of the same standard, whether a

participant declares a gross income equal to the minimum wage or one significantly higher and pays much larger premiums. As shown in Table 4, combined employer and employee contribution for health insurance and other benefits is 7.50% of gross reported income.

Declaring an income equal to the minimum wage also enables an employee to minimize provident fund contributions. Individual contributions to the fund accumulate as a fixed-income investment, received with interest and tax free upon retirement. Contributions to the provident fund can also be deducted from taxable income in determining liability for personal income tax. This is a more favorable arrangement than in most parts of the world, where defined-contribution schemes allow for either tax deductible contributions or tax exempt proceeds.

In many countries, tax-incentivized defined-contribution plans have been designed to particularly encourage the self-employed and those without a private or adequate public pension plan to save for retirement. Such plans are generally well received and widely used by private sector employees. However, not a single self-employed individual has invested a single TL in the TRNC provident fund, despite generous tax incentives. Instead, the self-employed deem it preferable to understate declared income and thereby avoid additional income taxes and social security contributions.

There are three potential reasons why TRNC taxpayers are reluctant to declare their true incomes. First, the social security system is widely acknowledged to be too generous to be self-financing in the longer term, requiring continuing budgetary support from Turkey or government cut-backs on other services, alongside the severe cuts to public pensions seen in other countries.



Second, provident fund savings are effectively borrowed by the government to cover its operating deficit, including social security and pension obligations and civil service salaries.<sup>12</sup> Investment in real estate (with transactions denominated in British pounds) is deemed preferable to investment in the TL-dominated provident fund, and a good hedge against macroeconomic conditions in Turkey and associated inflation risk. Indeed, there is little evidence that provident fund savings have been used to invest in infrastructure or health, to improve living standards in the TRNC or expand the tax base.

Third, TRNC individuals are reluctant to report higher incomes in a system with narrow tax brackets and high marginal tax rates applied at relatively low levels of income. Table 11 presents average and marginal income tax rates and total contributions by tax bracket (TB). A total of 75,112 employees out of 100,288 (including post-2008 civil servants) pay zero income tax but pay a total of 9.00% individual social security contributions, rising to a total of 20.00% in allowable deductions once employer social security payments are included (Table 11, column 1, rows 1 and 9).

With the addition of provident fund contributions, the employee faces average and marginal rate of deductions from their gross income of 13.00%, rising to 28.00% once the employer's share is included (Table 11, column 1, row 14). The average individual reported annual income for this group is 15,169 TL or US\$ 5,433. For those truly earning such low wages and already contributing 28.00% (including provident fund contributions) of their wage cost to the government via their employer, expenditure on essentials is likely to take priority over the option of contributing still

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<sup>12</sup> In December 2018, the amount borrowed by the government from the Provident Fund was 1 billion TL.

more to social security pension and investment schemes. In addition, the imposition of such high rates on low-income workers means that any increase in contribution would require significant growth in productivity or workers being paid a lower wage.

High marginal rates of withholding tax incentivize TRNC private-sector employers and employees alike to engage in tax avoidance practices, as a hedge against the government's unrealistically generous and economically insecure social security scheme/provident fund.

Table 11. Average and Marginal Withholding Rates for Employees and their Employers

			1	2	3	4	5	6		
			<b>TB0</b>	<b>TB1</b>	<b>TB2</b>	<b>TB3</b>	<b>TB4</b>	<b>TB5</b>		
Emp & Post 2008 Civil Servants		1	No of People in Tax Bracket	75,112	4,080	2,580	5,993	5,816	6,707	
		2	Average Gross Income (TL)	15,169	28,197	32,355	39,238	51,580	77,451	
		3	Average Gross Income (USD)	5,433	10,099	11,588	14,054	18,474	27,740	
		4	Average Income Tax Rates	0	0.50%	1.83%	4.51%	8.16%	13.88%	
		Rates without PF	5	Average Fiscal Burden SS+Income Tax	9.00%	9.50%	10.83%	13.51%	17.16%	22.88%
			6	Average Fiscal Burden-Employee+Employer	20.00%	20.50%	21.83%	24.51%	28.16%	33.88%
			7	Marginal Income Tax	0.00%	7.20%	14.40%	18.00%	21.60%	26.64%
			8	Marginal Fiscal Burden SS+Income Tax	9.00%	16.20%	23.40%	27.00%	30.60%	35.64%
			9	Marginal Fiscal Burden- Employee+Employer	20.00%	27.20%	34.40%	38.00%	41.60%	46.64%
		Rates with PF	10	Average Fiscal Burden SS+PF+Income Tax	13.00%	13.50%	14.83%	17.51%	21.16%	26.88%
			11	Average Fiscal Burden- Employee+Employer	28.00%	28.50%	29.83%	32.51%	36.16%	41.88%
			12	Marginal Income Tax	0	7.20%	14.40%	18.00%	21.60%	26.64%
			13	Marginal Fiscal Burden SS+PF+Income Tax	13.00%	20.20%	27.40%	31.00%	34.60%	39.64%
			14	Marginal Fiscal Burden- Employee+Employer	28.00%	35.20%	42.40%	46.00%	49.60%	54.64%

The 25,176 employees (including post-2008 civil servants) in the five income tax brackets TB1-5 face average withholding rates on total compensation, excluding provident fund, ranging from 20.5% (TB1) to 21.83% (TB2), 24.51% (TB3), 28.16% (TB4) and 33.88% (TB5) (Table 11, row 6). Respective marginal tax rates are 27.20%, 34.40%, 38.00%, 41.60% and 46.64% (Table 11, row 9).

Even if individual employees were to view the TRNC provident fund as a good financial investment, it is highly unlikely that it is politically sustainable to require contributions of between 28.16% and 33.88% and marginal tax rates of 41.60% to 46.64% on average pre-tax earnings of US\$18,474-27,740.

Taken together, provident fund contributions, income tax and social security contributions amount to average withholding on total labor costs for TB1-5 of 28.50%, 29.83%, 32.52%, 36.16% and

41.88%, respectively ( Table 11, row 11). Marginal rates of withholding total 35.20%, 42.40%, 46.00%, 49.60% and 54.64%, respectively (Table 11, row 14). In US\$-equivalent terms, these marginal withholding rates apply to incomes of US\$10,099, \$11,588, \$14,054, \$18,474 and \$27,740—low levels at which to successfully enforce withholding by private businesses. Indeed, in those sectors where withholding is enforced (for example, state universities), employees tend to cash out provident fund savings as soon permissible, in order to invest in real estate or other assets.

Table 12. Average and Marginal Withholding Rates for the Self Employed

			1	2	3	4	5	6
			<b>TB0</b>	<b>TB1</b>	<b>TB2</b>	<b>TB3</b>	<b>TB4</b>	<b>TB5</b>
Self Employed	1	No of People in Tax Bracket	3,058	387	279	6,466	1,050	346
	2	Average Gross Income (TL)	15,057	27,944	31,821	38,629	49,186	81,308
	3	Average Gross Income (USD)	5,393	10,009	11,397	13,836	17,617	29,122
	4	Average Income Tax Rates	0	0.62%	1.92%	4.60%	8.02%	15.02%
	5	Average Fiscal Burden SS+Income Tax	18.50%	19.12%	20.42%	23.10%	26.52%	33.52%
	6	Marginal Income Tax	0	7.32%	14.63%	18.29%	21.95%	27.07%
	7	Marginal Fiscal Burden SS+Income Tax	18.50%	25.82%	33.13%	36.79%	40.45%	45.57%

Table 12 presents taxation rates for the self-employed. Of a total of 11, 586 some 26.00% or 3,058 pay no income tax and only contribute to the social security system at a rate of 18.50%. Of the remainder, a small number (666 or 5.75%) are in the first and second income-tax brackets. The majority (6,466 or 55.81%) are in the third tax bracket, with a statutory marginal income tax rate of 25.00%, an effective marginal income tax rate of 18.29% and an effective average income tax rate is 4.60%. The average tax rate, including income tax and social security, is 23.10%. The marginal withholding rate, including both income tax and social security, is 36.79%. Only 12% of all self-employed taxpayers are in the two highest income tax brackets, subject to marginal effective income tax rates of 21.95% or 27.07% (Table 11, columns 5 and 6, row 6).

Many self-employed are businesses owners or directors, with the option of paying themselves compensation to be deducted from corporation tax or reducing their personal compensation and increasing corporation tax liabilities. TRNC corporation tax is 10.00% with an additional 15.00% withholding tax on retained earnings. This means that the effective rate of corporation tax is 23.50%—virtually the same as the average rate of personal income tax plus social security contributions levied on TB3 self-employed. By declaring gross income at this level (38,629 TL) and paying social security contributions, a self-employed individual would be eligible for a level of social security pension commensurate with contributions made on slightly more than two minimum wage incomes (Table 12, column 4, row 2). Very few (12%) of the self-employed declare incomes any higher, yet this group includes doctors, lawyers and businesspeople earning some of the highest gross incomes in the community (Table 12, row 1).

It is therefore clear that the behavioral response of the self-employed is to minimize their combined business and individual tax liabilities and social security contributions—i.e. when average individual income tax plus social security contribution are approximately equal to an average corporation tax rate of 23.50%.

A self-employed individual in TB3-5 faces marginal withholding income tax and social security, totaling 36.70%, 40.45% and 45.57%, respectively (Table 12, row 7, columns 4-6). If an increase in individual compensation is not paid out but is instead kept in the company, it is immediately subject to corporation and withholding tax of 23.50% while any dividends subsequently paid are subject to personal income tax of 18.29%, 21.95% and 27.07%, respectively (Table 12, row 6, columns 4-6). If dividends were paid out immediately, combined marginal effective income tax

rates (corporation income tax plus marginal income tax on the individual receiving dividends) for TB3-5 would be 37.53%, 40.33% and 44.15, respectively—roughly equal to marginal effective withholding rates on personal income and social security.<sup>13</sup>

In summary, the self-employed in the TRNC divide their income between compensation by and reinvestment in the firm, such that effective rates of withholding tax on personal and corporate income are virtually the same. The implication of this finding is that the self-employed place no value on the increased social security pension benefits for which they would be eligible were they to declare a higher level of income. Rather, the system is viewed as unsustainable and thus any contributions as little more than a tax. Similarly, no self-employed individual in the TRNC makes a contribution to the provident fund, despite such contributions being tax deductible—a telling indictment of the fund's perceived unviability by the only group able to choose whether or not to take part in the system.

Table 13 presents average and marginal rates of withholding tax for pre-2009 civil servants, nearly all of whom are in the top two tax brackets. (The 12 individuals in TB0-3 retired or died during the 2015 tax year, and so did not file full-year returns.)

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<sup>13</sup> The effective rate of tax on corporate income paid to shareholders as dividends is calculated as  $(0.10 + (0.9) * 0.15 + (1 - 0.10 - 0.9 * (0.15)) * (\text{marginal effective withholding rate of individual at their marginal income tax rate}))$ . No social security and provident fund contributions are paid on dividends.

Table 13. Average and Marginal Withholding Rates for the pre-2009 Civil Servants

		1	2	3	4	5	6	
		<b>TB0</b>	<b>TB1</b>	<b>TB2</b>	<b>TB3</b>	<b>TB4</b>	<b>TB5</b>	
Pre 2009 Civil Servants	1	No of People in Tax Bracket	1	1	4	6	540	10,154
	2	Average Gross Income (TL)	21,117	25,923	30,756	38,001	52,401	85,111
	3	Average Gross Income (USD)	7,563	9,285	11,016	13,611	18,768	30,484
	4	Average Income Tax Rates	0	1.07%	1.94%	6.14%	9.93%	16.84%
	5	Average Fiscal Burden Pension+Income Tax	8.00%	9.07%	9.94%	14.14%	17.93%	24.84%
	6	Marginal Income Tax	0	7.62%	15.23%	19.04%	22.85%	28.18%
	7	Marginal Fiscal Burden Pension+Income Tax	8.00%	15.62%	23.23%	27.04%	30.85%	36.18%

Average income tax rates for TB4-5 pre-2009 civil servants range from 9.93% to 16.84% of gross income (Table 13, row 4, columns 4 and 5), with corresponding marginal income tax rates of 22.85% and 28.18% (Table 13, row 6, columns 4 and 5). Including pension contributions, average withholding rates rise to 17.93% and 24.84% and marginal withholding rates to 30.85% and 36.18%. With the exception of any outside income earned, these individuals have no opportunity to evade or avoid income tax.

A TRNC taxpayer declaring 53,401 TL (US\$ 18,768) annually is subject to an average income tax rate of 9.93% and a marginal rate of 22.85%. In the Republic of Cyprus (South Cyprus), the average and marginal tax rate would be zero. A TRNC taxpayer earning 85,111 TL (US\$ 30,484—TB5) faces an average income tax rate of 16.84% and a marginal rate of 28.18%; in the South the average tax rate would be a maximum of 5% with a marginal rate of 20% (PWC, 2018).

As shown in Table 10, civil servants account for 66.00% of all income taxes paid in the TRNC with a significant proportion of the remainder paid by employees of other state institutions (Table 10, row 5), while over 76% of all employees—or 82% of private-sector employees—pay no income tax at all. The main effect of the personal income tax system is therefore to claw back some

of the salaries paid to state employees, while imposing little or no fiscal burden on private-sector employees and the self-employed.

## **8. Discussion and Conclusions**

This paper analyzed the distribution of the burden of the social security, pensions and income tax systems according to type of employment. In addition, the marginal rates of withholding for these sources of government revenue have been estimated for individuals in different income levels and employment.

At first glance, the TRNC appears to be a modern state with an almost universal, state-run, defined-benefit pension scheme that earmarks 4.50% of workers' incomes to support public healthcare, and a state-run provident fund that entails generous tax benefits for participation in a defined-contribution pension scheme. In addition, highly progressive statutory income tax rates appear to underpin concepts of social justice in the overall fiscal system. The truth, however, is a very different story.

The design of the tax system and its interaction with the systems of social security and provident fund contributions have created a powerful set of incentives for non-compliance. Top income-earning employees in the private sector face a combined marginal fiscal burden of 54.64%, prompting tax avoidance on such a scale that most private employees pay no marginal income tax, social security or provident fund contributions on income above the minimum wage. At the same time, the self-employed are able to allocate their incomes so as to minimize the total burden of social security, provident fund contributions and individual and corporate income tax payments.



High marginal tax rates on low (by developed country standards) levels of income have created informal administrative measures to alleviate the fiscal burden on individuals. However, as is common with such ad hoc solutions, the end result is neither equitable nor economically neutral.

In terms of the social security pension system, 87% of individuals who have a choice (i.e. private-sector employees) opt to pay contributions at a level entitling them to the lowest possible pension—even though returns (i.e. pension payments) are promised to be three times the value of total contributions plus interest buildup made by the participants (Altiok and Jenkins, 2015). Only 12% of the self-employed contribute more towards a social security pension than is required of those earning the equivalent of more than two minimum wages, even when the cost of providing the pension benefits receives the same subsidy as employees. They reach this level of contributions only because if they declared lower compensation, they would be leaving more money in their businesses and as a consequence they would end up paying more taxes (corporation plus individual) in total. The provident fund, a compulsory, defined-contribution pension plan, receives double relief from taxation. Contributions to the fund are not taxed and no income tax is levied on either the principal or the interest accumulated by the time of retirement. However, funds are only invested in TRNC-government securities and interest adjusted too slowly to respond to real changes in inflation—factors that discourage the self-employed from participating.

Although the TRNC income tax regime appears an instrument of vertical equity, it has in fact served to reduce the taxpayer net to little more than government employees and the staff of various parastatal organizations—historically recipients of the highest salaries in the TRNC.

The administrative structure of the tax system, whereby private sector employees can obtain a zero-income tax rate, is thought necessary to maintaining a competitive private sector. Given the level of inefficiency of government services, including an underfunded and unreliable health system, there is little motivation for TRNC taxpayers to contribute more than the minimum towards social security. It is also not obvious why lower-paid employees should pay higher taxes to fund the over-generous pension benefits of those fortunate enough to have retired under the pre-2009 social security and civil service pension systems (Ahtiok and Jenkins, 2013b).

The above analysis of the TRNC's individual income tax regime and social security and provident fund systems considers just one part of the revenue system of Northern Cyprus. A more complete picture of differential burdens and their effects on economic efficiency would entail similar analysis of the corporation tax system. Most businesses in the TRNC are SMEs integrally linked to their owners—an issue raised here in the context of the self-employed, where the taxation of a business and its individual owners and directors are intertwined.

A full understanding of the political economy and economic effects of public finances requires an analysis of the distribution of the direct and indirect tax burden, across income levels. In terms of the indirect tax system, this includes estimation of the burden across individuals imposed by the value-added and excise (funds) tax systems, as well as trade taxes on imported goods and services.

Any reform of the overall TRNC tax regime must take account of the fact that many Turkish Cypriot workers can, if they wish, find employment in South Cyprus—an attractive prospect for some as the South emerges from recession, offering higher wages and significantly lower income

tax rates than the TRNC. In addition, the same level of social security deductions (approximately 20%) offers access to public services, including healthcare, of European Union standards (Republic of Cyprus, 2018).

Given the poor design and weak administration of the TRNC income tax system, it is not likely that the additional revenue required to fully finance the social security system can or should be collected via income tax. Indeed, even if a major effort were made to increase private sector employees' compliance with the payment of income tax, any improvement would be unlikely to be sustainable beyond the very short term.

In seeking to address the root causes of fiscal deficit in the TRNC, policymakers must consider the wholesale reform of 1) public-sector employee compensation; 2) the social security system and its funding mechanisms; and 3) the income-tax regime.

The current revenue system, marked by a particular lack of transparency, has evolved to accommodate the realities that employers, employees and policy makers face in the TRNC. There is no doubt that it is not sustainable if North Cyprus wishes to align itself with EU norms.

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